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10/722,156	11/24/2003	Raj B. Apte	D/A3536	6774

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EXAMINER

WILLS, MONIQUE M

ART UNIT PAPER NUMBER

1745

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	04/03/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/722,156

Applicant(s)

APTE ET AL.

Examiner

Monique M. Wills

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 3/9/07.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-39 is/are pending in the application.
- 4a) Of the above claim(s) 1-26 and 39 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 27-38 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- ☐ Notice of Informal Patent Application
- ☐ Other: _____

DETAILED ACTION

Election/Restrictions

Claims 1-26 & 39 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected fuel cell with varying electrolyte thicknesses, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in the reply filed on March 9, 2007. *Applicant did not submit arguments to support traversal of the restriction.*

Claim Objections

Claim 27 is objected to because of the following informalities: the term "a manifold cover that **in** contact" includes a typographical error. Appropriate correction is required.

Claim 35 is objected to because of the following informalities: the term "wherein **the a** bend in the anode" includes a typographical error. Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 27-38 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 27 recites the limitation "*a* first manifold " and "*the* second manifold". It is unclear as to whether the " *a* first manifold" is formed by the manifold cover and electrolyte, or is a different manifold altogether. The "*the* second manifold" appears to have been formed by the manifold cover and electrolyte. It is unclear as to which manifolds the limitations make reference. An appropriate correction is required.

Claim 28 recites the limitations "*the* first chamber" and "*the* second chamber". There is insufficient antecedent basis for this limitation in the claim.

Allowable Subject Matter

Claims 35 & 38 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

The instant claims are allowable over the prior art of record, because the prior art is silent to a fuel cell comprising an electrolyte with an anode and cathode on a first side thereof, wherein anode and cathode bends are approximately 90 degrees (**claim 38**) or exceeds 90 degrees but less than 180 degrees (**claim 35**).

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States

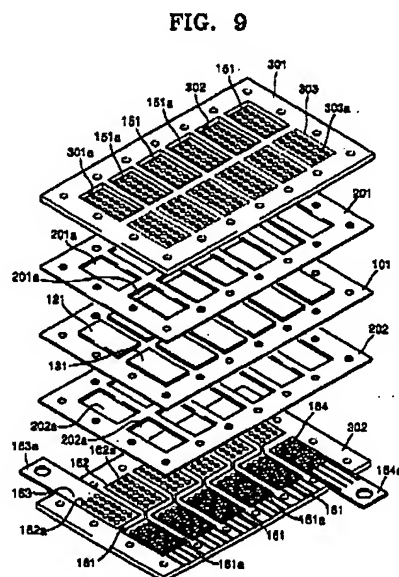
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only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 27-29 & 32 are rejected under 35 U.S.C. 102(e) as being anticipated by Choi U.S. Patent 6,689,502.

With respect to **claim 27**, Choi teaches a fuel cell comprising: an electrolyte (col. 8, lines 25-35) having a first side; a manifold cover (201) that is in contact with the electrolyte (101), the manifold cover (201) and electrolyte (101) together form two manifolds, a first manifold including an anode (121), and a second manifold including the cathode (131), wherein the two manifolds are both on the first side of the electrolyte.

See Figure 9.

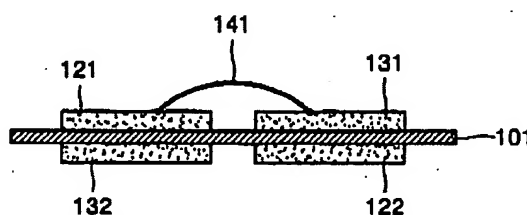


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With respect **claim 28**, the fuel cell includes a fuel in the first chamber; and oxidizer in the second chamber. See column 5, lines, 55-65.

With respect to **claims 29 & 32**, the anode (121) and the cathode (131) are in a first plane, the first plane is approximately parallel to the first side of the electrolyte (101). See Figure 6.

FIG. 6



Therefore, Choi anticipates the instant claims.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have

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the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 27-29, 32, 34 & 36 are rejected under 35 U.S.C. 102(e) as being anticipated by Potter et al. U.S. Pub. 2004/0115507.

With respect to **claim 27**, Potter teaches a fuel cell 200 comprising: an electrolyte (225) having a first side; a manifold cover (205) that is in contact with the electrolyte (225), the manifold cover (205) and electrolyte (225) together form two manifolds, a first manifold including an anode (215), and a second manifold including the cathode (210), wherein the two manifolds are both on the first side of the electrolyte. See Figure 2, and paragraph 49.

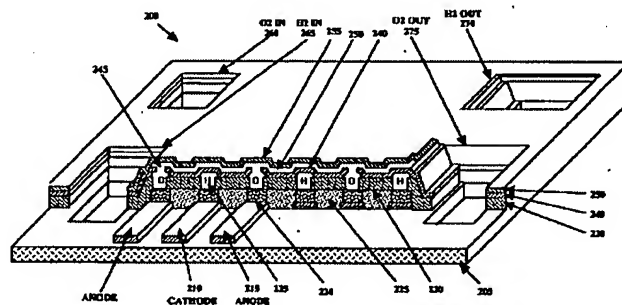


FIG. 2

With respect to **claim 28**, the fuel cell includes a fuel in the first chamber; and oxidizer in the second chamber. See paragraph 52.

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With respect to **claims 29 & 32**, the anode (121) and the cathode (131) are in a first plane, the first plane is approximately parallel to the first side of the electrolyte (101). See Figure 2.

With respect to **claim 34**, the first side of the electrolyte (225) includes a first indentation and a second indentation, wherein each include an anode and cathode, respectively. See Figure 2 and paragraph 49.

With respect to **claim 36**, the manifold cover is in contact with an edge of the electrolyte indentations containing electrodes. See Figure 2 and paragraph 49.

Therefore, Potter anticipates the instant claims.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 30, 31, 33 & 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Choi U.S. Patent 6,689,502.

Choi teaches a fuel cell as set forth in the rejection recited hereinabove. With respect to **claim 30**, Choi teaches the manifold separating the cathode from the anode with a perpendicular section.

However, Choi does not expressly disclose: the perpendicular section separating the electrodes by less than 1000 micrometers (**claim 30**); the distance between the edge of the electrodes furthest from the perpendicular section being approximately the sum of (1) the distance separating the closest points on the anode the cathode and (2) the width of the cathode and (3) the width of the anode (**claim 31**); thickness of the electrolyte exceeding 10 micrometers and a distance separating at least one point on the anode and cathode less than 50 micrometers (**claims 33 & 37**).

However, it would have been obvious to one of ordinary skill in the art at the time the instant invention was made to employ the perpendicular section to separate the electrodes by less than 1000 micrometers, because such a modification would have a change in size of the manifold section (**claim 30**). A change in size is generally recognized as being within the level of ordinary skill in the art. In re Rose, 105 USPQ 237 (CCPA 1955).

With respect to **claim 31**, it would have been obvious to one of ordinary skill in the art at the time the instant invention was made to employ the instant distance between the edge of the electrodes furthest from the perpendicular section, because such a modification would have a change in

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size of the manifold section. A change in size is generally recognized as being within the level of ordinary skill in the art. In re Rose, 105 USPQ 237 (CCPA 1955).

With respect to **claims 33 & 37**, it would have been obvious to one of ordinary skill in the art at the time the instant invention was made to employ the instant electrolyte thickness, because such a modification would have a change in size of the manifold section. A change in size is generally recognized as being within the level of ordinary skill in the art. In re Rose, 105 USPQ 237 (CCPA 1955). With respect to the instant distance between electrode, such an arrangement is obvious, since it has been held that rearranging parts of an invention involves only routine skill in the art. In re Japikse, 86 USPQ 70.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 33 & 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Potter et al. U.S. Pub. 2004/0115507.

Potter a fuel cell as describing in the rejection recited hereinabove.

However, Potter does not expressly disclose the thickness of the electrolyte exceeding 10 micrometers and a distance separating at least one point on the anode and cathode less than 50 micrometers (**claims 33 & 37**).

However, it would have been obvious to one of ordinary skill in the art at the time the instant invention was made to employ the instant electrolyte thickness, because such a modification would have a change in size of the manifold section. A change in size is generally recognized as being within the level of ordinary skill in the art. In re Rose, 105 USPQ 237 (CCPA 1955). With respect to the instant distance between electrode, such an arrangement is obvious, since it has been held that rearranging parts of an invention involves only routine skill in the art. In re Japikse, 86 USPQ 70.

Conclusion

Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Monique Wills whose telephone number is (571) 272-1309. The Examiner can normally be reached on Monday-Friday from 8:30am to 5:00 pm.

If attempts to reach Examiner by telephone are unsuccessful, the Examiner's supervisor, Patrick Ryan, may be reached at 571-272-1292. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR.


Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the

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Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

MW

3/17/07


STEPHEN KALAFUT
PRIMARY EXAMINER
GROUP 1700